SHORT RESUME/ SYNOPSIS OF Ph. D TOPIC

Entitled

Swami Ramanand Teerth Marathwada University,

Nanded, Maharashtra, India

(UGC recognized, NAAC Re-accredited 'A' grade state university)

STUDIES ON PHYSICO-CHEMICAL PARAMETERS, FISH PARASITIC FAUNA AND FISHERY MANAGEMENT OF GHARNI DAM FROM LATUR DISTRICT

Submitted to

THE FACULTY OF SCIENCE AND TECHNOLOGY,
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NANDED –431 606 (M.S.) INDIA.

For the Degree of
Doctor of Philosophy in Zoology

In the subject

Zoology

Faculty of Science

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Research Guide

Shivaji Mahavidyalaya, Udgir

2021-22

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Abstract

Water is an inorganic chemical substance. The chemical formula is H_2O its made by two hydrogen atom and One oxygen. Water is vital for all known forms of life; it's one of the most important precious natural resources. Global fresh water is the most Precious human resource and frequently earth is called the blue planet. (Bapurao Dagdu Sirsath 2018)

It occurs on the earth in three physical state i.e. Liquid, gas and solid The hydrobiogical cycle refers to The Process Whereby gets converted from its liquid or solid state into its vapor state The water is Required For domestic Purpose Industries, Agriculture etc.

The work of physico-chemical, fishery management and study of fish parasitic fauna of fresh water body Gharni Reservoir Tehsil, Shirur (A) Dist Latur Maharashtra. The Physico – chemical Parameters like Rain Fall ,color, Test, Transparency, water Temperature , Turbidity , Alkalinity ,oxygen, pH, Phosphate , Nitrate, Salinity etc.

The study area, The Gharni dam is earth fill dam on Gharni River near Shirur Anantpal District Latur Maharashtra India. The dam water is used for domestic purpose, Agriculture, fish culture and drinking after filtration. The study of dam water qualities collects the sample five (5) sites and studies the physico-chemical, fishery management and identification of fish parasitic fauna.

Introduction

Water is a simple inorganic compound consisting of hydrogen (H) and oxygen (O) elements. The chemical formula of water is H_2O. the water present in earth three physical state i.e., solid, liquid and gas .the earth surface 71% covered by water but only 2.7% of the total water is fresh water of which only 1%is ice free water in river and lakes fresh water also becomes available on earth in the form of rainfall, dew etc. most of the water (97%) on earth's surface is in oceans.

India receives an estimated rainfall of about 400 MHM (million hectare meter) about 1/3 of this will be lost immediately due to evaporation. Approximately 80 MHM of water seeps in to the soil leaving 160 MHM of water flow in to the large flow drainages most of this water flow back to the sea in the form of streams and rivers, very little amount of water get lodged in ditch and dishes in the form of pool, lake etc. water is vital part of our lives. We drink it, we wash with it, and we use water for irrigation crops for transporting goods as well as for generating energy at hydroelectric dams and nuclear power plants. All animals and plants need water to survive and the other organisms require water to break down food molecules or generate energy during the respiration process. Water also helps many organisms regulate metabolic and dissolve compounds going into or out of the body. We treasure our water for reactions like swimming, boating and fishing. Unsafe water and lack of basic sanitation cause 80% of disease and killed more people every year then all forms violence, including war. Children are especially vulnerable as their bodies aren't strong enough to fight diarrhea, dysentery and other body illnesses.

Water included in physico-chemical parameters. the physical parameters like temperature, color, test, turbidity, light intensity, odor etc. chemical parameters like ,pH, electrical conductivity, total hardness, calcium, total dissolved oxygen,Co_2, salinity, alkalinity, biological oxygen demand etc.

The water contains much organic matter like salt, ca, Fe, Na, k and trances Co_2, O_2 NH_3 and other gases in the atmosphere. Water is essential for life but contaminated water causes serious diseases in organisms and human beings. Water gates are polluted by adding domestic sewage water, waste industries water etc.

Fish management means the integrated process of information gathering , analysis, planning consultation , decision making ,allocation ,of resources and formulation and implementation with enforcement as necessary of regulation or rules which govern fisheries activities in order to ensure the continued productivity of the resources and the accomplishment of the fisheries objectives .(Google definition). the fisheries sector of India is immensely contribution to the economy of the country . it provides valuable foreign exchange and employment to millions of people .At the same time it is an instrument of livelihood foe a large section of economically backward population of the country more than 7 million fishers in the country depend on capture fisheries and aquaculture for their livelihood . Indian fisheries are an important component of the global fisheries with Indian being the fourth largest producer of fish in the world and second in the inland fish production. Indian share from 3.2% in 1981 to 4.5 % at present .fishery sector occupies an important place in the socioeconomic development of the country. The inland capture fishery resources comprise rivers and canals. (S. Ayyappan and A.D Diwan Article 2006)

Identification of fish parasite has a wide range of distribution in all group of fish. Most of the fishes either wild or cultured are infected with parasites; fish parasite can be internal and external. Fish parasite included protozoans , trematode , cestodes, nematodes ,acanthocephalans, crustacean , and arthropods. (MD Julfikar Ali 2018) (said stephen A. smith , virging tech speaking at the annual AVMA convention in Chicago ,USA .)

The Gharni dam is an earth fill dam on Gharni River near the Tehsil Shirur Anantpal district latur. This dam opening day is 1969 the owner is government of Maharashtra in India. Official name is Gharni dam Do1231.the height of dam above lowest foundation 15.24m(50.0ft) and length is 956m(3,136t). the gross storage capacity is 25,080.00km3(6,017.01cu mi). the exact google location of dam is 18.3803258^{o} N and 76.8264913^{0} E. This Dam near the tehsil shirur Anantpal and its dam water is used for domestic, agriculture, fish culture drinking after filtration. This dam water depends on the above 10 villages that provide the water and uses are agriculture, domestic purposes and drinking.

- Review of Literature -

-Sidnei et.al (1992) he studied water qualities is determined by the physico-chemical chemical and Limnology of a reservoir.

-Dagdu Suresh Dhimdhime (2003) theses he works the hydro-biology of Siddheshwar dam under the Swami Ramanand Teerth Marathwada University Nanded. He reported physico -chemical and biological parameters i.e temperature, turbidity, alkalinity, dissolve oxygen, free carbon dioxide, biochemical oxygen demand, chemical oxygen demand ,chlorides, salinity, total hardness ,calcium and magnesium, sodium, potassium, sulphur, iron, nitrate, phytoplankton and zooplankton.

-D..D.Kadam thesis (2000) Swami Ramanand Teerth Marathwada University Nanded, he works for the hydro-biology of freshwater ponds at Bhategaon in Parbhani district. He studied Abiotic factors of dam i.e temperature, pH, total solid, chloride, dissolved oxygen, hardness, chemical oxygen demand, calcium, sodium, potassium, phosphate and freshwater ecology.

-K .S. Pawar theses (2002) Swami Ramanand Teerth Marathwada University Nanded. He studied the hydro-biology of Shirur dam near Mukhed Nanded district. He reported for physical characteristics of dam water, description site Climatological condition of dam, water temperature, total solid, total suspended solid, next is chemical characteristics of dam water dissolve oxygen, biological oxygen demand, chemical oxygen demand, alkalinity, hardness, calcium, Magnesium and biological parameters phytoplankton and zooplankton and aquatic vertebrates animal.

- S. Ayyappan and A.D. Diwan fisheries research and development in India (2006). Vol, 26 no.1. Indian council of agricultural research (ICAR). In this article they studied on fisheries and aquaculture sector and its development in India.

-Devi Rama Tummala (2007) Theses Swami Ramanand Teerth Marathwada University Nanded Nanded. She study of some aspects of hydro-biology of Aalisagar dam water. She reported the work year 2005-2006 and studied monthly variation of surface water, temperature, pH, transparency total dissolved solid, dissolve oxygen etc.

-Rajindar Jindal and Rakesh Thakur (2014) International journal of Environmental Engineering 6(6 4);44-459.Its study the hydro-biological and productivity of kuntbhyog lake (district mandi, himacal pradesh), India.

-Gaurab Jyoti Kalita, Pradip Kumar Sarma ,Priyanuz ,Goswami ,Srustidhar Rout (2015) . Journal of entomology and zoology studies. E-ISSN; 2320-7078, P -ISSN ;2349-6800 . they are studied the socio-economic status of fishermen and different fishing gear used in beki river, barpeta Assam.

-Bhalla Resham (2016) Theses Dr Babasaheb Ambedkar Marathawada University she studied the limnological studies of Godavari river at Nashik. She reported the physico-chemical parameters ex temp,turbidity,conductivity,TDS,pH,CO_2, NH_2, total hardness, dissolved oxygen, BOD, COD, etc.Biological parameters ex,phytoplankton, zooplankton, primary productivity, coefficient correlation.

-Shambharkar Rajesh M. (2016) Theses Dr Babasaheb Ambedakar Marathawada University. He studied the Limnological study of girna project near Panzangoan Tahsil Nandgoan district nashik India.he reported the physical parameters ex, water temp, rainfall, pH, total solids, total dissolved solids, total suspended solids.chemical parameters ex,dissolved oxygen free carbon dioxide, total alkalinity, chloride, total hardness, calcium hardness, magnesium, nitrite.

-Mete Yogiraj Tulsiram (2016) Theses Dr Babasaheb Ambedkar Marathwada University. He studied the limnological study of some water bodies of kaij tahsil district beed.hr reported for physical and chemical parameters . physical parameters ex, water temp, rainfall, pH, total solids, total dissolved solids, total suspended solids.chemical parameters ex,dissolved oxygen free carbon dioxide, total alkalinity, chloride, total hardness, calcium hardness, magnesium, nitrite.

- Kumbar Aravind Choodamani (2016) theses Dr Babasaheb Ambedkar Marathwada University he studied the Limnological study of ujaini project of Madha tahshil Solapur. He reported the ecological parameters, physical parameters, temp, transparency of water to light, pH, chemical parameters ex , free carbon dioxide, total alkalinity, total hardness, calcium, magnesium, chlorides, nitrates. Phosphates.

-Verma Pramod Kishor (2020) Theses Chhtrapati Sahuji Maharaj University completed date (1972) He studied the helminth parasites of fishes .

Masart Shah, Erum, Mushtaq, Sheikh, Taiamul Islam, Inam Sabha, Umara Qayoom and Sami Ullah Bhat. (2020) J,Himalaya Ecol, Sustain.Dev. Vol.15 . ISSN 0973-7502 . Its studied the hydro biological study of aripal stream in tral kasmir valley.

Recently miss Bhagwageeta Prabhu Vairale (2020) international research journal of engineering and technology she studied analysis of physical chemical parameters and drinking water quality check in Udgir city dist Latur, Maharashtra India .

Objective -

- To study the physico- chemical parameter of Gharni Dam.
- To study the fishery management in Gharni Dam.
- Provide clean nutrition food
- To increase foreign exchange
- Employment generation
- Uplift socioeconomically condition of fisher man
- Collection of statistical information of fish catch and and revenue.
- To study of identification of fish parasitic fauna.

Methods-

Study Area- Gharni dam tehsil shirur Anantpal Dist Latur. The gharni dam is earth fill dam on Gharni river. Select the five (5) sampling sites the Sampling sites 4 corners and 5th one at the center of the pond the physico-chemical parameters water sample collected.

Site Analysis. = pH, TDS, electrical conductivity and turbidity calculate the site by using the standard rules of American public health Organization and also using different types of celebrating standard instrument such as digital pH meter, digital conductivity meter (350 EC meter) digital TDS meter, air temperature by mercury thermometer , water temperature recorded using the mercury thermometer, turbidity Check use the method Sacchi disk.

Laboratory Analysis = the sample collected in a polythene bag for caring laboratory for destination of oxygen the sample 300 ml 6th separately in bottle at spot by using Winkler agent.

Use of following method -

Dissolved oxygen -Winkler modified method

Alkalinity - Titrimetric method

Total dissolved solid - standard method APHA

Electrical conductivity - conductivity standard method APHA.

Biological oxygen demand - direct method standard method for estimation of water and waste water analysis 1976 12th Edition APHA, AWWA and WPCE, Washington ISI.

Free carbon Dioxide - Titrimetric method APHA

Calcium - EDTA Titrimetric method ISI.

Potassium - Flame photo metric method APHA.

Silica- Colorimetric molybdo silicate method APHA.

Sulphate - volumetric method ISI.

Total Hardness - standard method APHA.

Fish management – in selected the study area, places description

Collection the data: observation and interview method.

Identification of fish parasite - Techniques -Fixation , staining , permanent slide, Identification with the help of standard key , description, Data collection (D.W. Bruno , B. Nowak , D.G. Elliott disease of aquatic organisms dis aquat org. Vol. 70 ; 1-36, 2006)

Importance of the study our society application –

- In India on large scale sea food availability is abundant. The taste of sea food is already common and developed. But fresh water food is more tasty and different from sea food.

So if pay attention toward proper fish management, resulting in huge production of fresh water food.

- Increase in production to meet protein requirement.
- Development of export potential.
- Improving the social economic condition of fisherman.

International Status –

-I D S I P Thilakarantne, G Rajapaksha, and A Hewakopara,(2003) Article- Diseases of aquatic organism 54 (2);157-62. They are studied about the parasitic infection freshwater ornamental fish in Sri Lanka.

- Furhan Iqabal, A,I Muhammd, Kanwal, Nazia (2006) Article research gate. They are studied the limnological study of river soan (punjab) Pakistan.

- S-Ayyappan and A.D Diwan fisheries research and development in India (2006). Vol, 26 no.1. Indian council of agricultural research (ICAR). both studied the fisheries research and development in india.

-Jafari N. G. and Gunale V. R (2006) J. APPl. Sci. Environ. Mgt. Vol. 10 (2) 1531-158.JASEM ISSN-1119-8362 . Both studies the Hydro biological study of Algae of on Urban freshwater River. Reported the Biological assessment is a useful alternative for assessing the ecological quality of the Aquatic ecosystem since Biological communities understand the environmental effect of water chemistry.

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-Chendur Palpandi- (2011) International journal of biodiversity and conservation. He worked on hydrobiological parameters population density and distribution pattern in the gastropod Nerita (dostia) crepidula ria lamarck , 1822 from mangroves of vellar estuary, South East India. He studies the seasonal variation in physico-chemical parameters, (atmospheric and water) pH, salinity, dissolved oxygen and rainfall.

- R. Sathiadhas and Shyam.S.Salim. Conference paper (2012) ICMR - central marine fisheries research institute 220 publication 702 citation. He study the marine fisheries management in india ; policy initiatives.

-A.P Goswami and P. C Mankodi (2012) International journal for environmental Rehabilitation And dons elevation. he worked hydro biology assessment of the fresh water reservoir Nayari, Rajkot District Gujarat.Both the study seasonal variation in the water qualities and study of physical chemical parameters like pH , temperature , alkalinity ,hardness, chloride, dissolved oxygen, phosphate, nitrite .

-Shen, G. and Heion, M. (2013) IIASA Interian report . both studied the an overview of fisheries management in India.

-Gaurab Jyoti Kalita, Pradip Kumar Sarma ,Priyanuz Goswami ,Srustidhar Rout (2015) . Journal of entomology and zoology studies. E-ISSN; 2320-7078, P -ISSN ;2349-6800 . they are studied the socio-economic status of fishermen and different fishing gear used in Beki river, barpeta Assam.

- A. K. M. Fazlur rahaman, M. A Mansur and M. Shahidur Rahman (30 june 2017) ISSN ; 2224 -0616. Int,j.Agril.Res. Innov. & Tech.7 (1); 14-20, june, 2017.those study the monthly and diurnal variations of limnological conditions of two ponds was conducted in the Bangladesh agricultural University campus ,mymensingh.

-Rajgopal, S. Muruganandam , A and Rengarajan. (2016) International Journal of Current Research vol-8 ISSN :097500975-833x. studied the hydrobiology of Agniar estuary, east coast, Tamilnadu, India. Both the study monthly variation showed minimum and maximum value water temperature derby Turbidity, pH, Dissolved oxygen, salinity calcium, nitrate , ammonia, respectively the minimum and maximum value of a bow parameter where during the study period of August 2015 2 April 2016 in the Agniyar Estuary.

-Shuolin Huang, Yuru He (2019) Article Research gate, aquaculture and fisheries 4(5) Dol;10.1016/j.aaaf.2019.004. both studied the Management of chain's capture fisheries; review and prospect.

-Jay Narayan Shrestha, Ganesh Bahadur Thapa, and SamjhanaShrestha (2019) Journal of Natural History Museum Volume 31. they are studied the A survey of gastrointestinal helminth parasite of Channa species at kanchanrup Municipality, Saptari, Nepal.

-Wathchariya Purivirojkul and Apiruedee Songsuk.(2020) Article-Animals. Both studied the new records of fish parasitic isopods (crustacea;isopoda) from the gulf of Thailand.

National Status.

-K.S Pawar Theses (2002) Swami Ramanand Teerth Marathwada University Nanded. Studied the hydrobiology of the shirur Dam near mukhed nanded District.

-M. A.Mane Theses (2002) Swami Ramanand Teerth Marathwada University Nanded . He studied the hydrobiology of manar river near Degloor district Nanded.

-Kadam M. S, Nanware S. S, Taiswal N. R and sunnap. N. N (2003) National channel study the physico-chemical characteristics and quality of water from vishnupuri Dam Nanded maharashtra.

- Devi Rama Tummala (2007) theses Swami Ramanand Teerth Marathwada University Nanded. She studies some aspects of hydrobiology of alisagar dam water.

- N. V Waghmare (2008) Theses swami Ramanand Teerth Marathwada University Nanded. He studied Hydro biological studies of Kalamnuri minor irrigation dam from kalamnuri dist Hingoli - B.R Chavan , A Yakupitiyage and S. kumar .(2009) Asia- pacific Journal of Rural Development . vol. XIX , No. 2 .they are studied the socio-economic analysis of fisherman at coastal fishery management , india .

-Sawant parvati Laxmanrao (2009)Theses Dr, Babasaheb Ambedkar marathwada University. Aurangabad. She studied on hydrobiological study of makani Reservoir mkani dist osmanabad.

-Bandella N. N and Deshpande D.(2013) National journal study Effect of total Dissolved solids on reduction Of Phenolic compounds and chemical oxygen demand.

-B. Das,. P. Boruah, D. Kar (2014) IOSR journal of environmental science, Toxicology and food Technology. Corpus ID- 130670676l130670676.study of seasonal variation of water quality of river siang in Arunachal pradesh, India. Reported the physico-chemical parameters during July

2012 to June 2013 in the six different study Sites of River siang. Measured in collected samples. Including water color, Air temperature, water temperature, pH, Do, FCO2, conductivity, Total alkalinity, turbidity, total Hardness, TSS, TDS, calcium, Magnesium, sulphate, chloride, iron, sodium, manganese zinc.

- R. Sidhu A. Gaur, Shalini Gupta (2014). International Journal of scientific research. Corpus ID-132341411. studied The Seasonal variation in the Hydrobiology of River Ganga at Brijghat (J. P. Nager) India.

-A.B Sarwade and Nitin Anandrao Kamble (2014) Article- Research gate . both the studied the hydrobiolobical assessment of water bodies from miraj tahsil maharastra; A comparative study

-Shambharkar Rajesh M. (2016) theses Dr Babasaheb Ambedakar Marathawada University.he studied the Limnological study of Girna project near Panzangoan tahshil Nandgoan district Nashik

-Rajshri Deolalikar (2016) Article-Research Gate. He studied the studies on prevalence of platyhelmith parasite of freshwater fishes from Jaikawadi dam at Aurangabad District, (M.S.) India.

Significance of the study -

Hydro biology is the science of life and life process in water part of the Broader Studies of our ecology hydro biology looks at the help of living water based organisms in both flowing and still water and includes studies in economic biology morphology taxonomy industrial biology and others the Gharni Dam is an Earth fill Dam on Gharni river. This dam water covered 956 m (3,136 ft) area.

This dam is surrounded by 10 villages. Its dam provides the water to all surrounding villages. The dam water Physico chemical study is very important because water includes various types parameters and pollutants. Water including harmful pollutants is affected by all living organisms.

The dam water study also helps having on biological communities along with re-establishing damaged ecosystems.

The dam water hydro biological study important because humans and animals water included all organisms depend it.

The study also helps to improve the water qualities and report the amount of water pollutants.

This dam has a large water supply and more than 100 fisherman works in the dam. Many types of fish are found in this dam and if proper type of fish management is done, a large number of fish can be produced and good business can be done here. If the fisheries management is done properly, it can benefit the fisherman, change the economic condition and benefits the society, so it would be wise to work on fisheries management.

Important for identification of fish parasite form that dam.

. Proposed work plan / Formulation and structure of study.

The proposed work will consist of following chapters,

1. Introduction: For importance of the work, national and international status of the topic.

2. The chapter second will be devoted to review of literature of the work.

3. The chapter third will be related to materials and methods adopted in completion of the work.

4. The chapter fourth will contain Physico chemical parameter analysis.

5. The chapter fifth will contain fish Parasite, Identification keys.

6. The chapter sixth will contain comments fishery management

7. The chapter ninth will contain result, discussion, recommendation

8. The chapter will contain bibliography**.**

Year- wise plan of work .

First year -

- Attendance and completion of course work
- Preparation of course work exam
- Cleared / passed Course work exam
- Preparation of synopsis
- Extensive collection of review of literature of given topic
- Collection of data of given research topic
- Sample collection/ field visit/survey
- Data collection.

Second year:

- Field visit/ survey/ selected study area
- Identification of Parasite.PhotographyExperimental Lab work
- Preparation of Research papers
- Collection of required instruments

Third year -

- Statistical data analysis.
- Presentation of tables , graphs, figure, calculation
- Paper publication
- Typing work .
- Preparation of final synopsis
- Reference collection

Fourth year: Submission of Thesis

Reference –

Fish and fisheries by Pandey and Shukla

Economic Zoology by Shukla and Uphdhay

Fish and fishery of India by V.G. Jhingran

Fisheries and Aquaculture Ravi Shanker Piska

World fish farming cultivation and economic

- Later Sreenivasan et. al (1964)) studied on Hydrobiological features and plankton of bavani Sager reservoir.

-George J. P (1976) Hydrobiological studies on the lower lake of Bengal with special reference to the productivity of economic fish. PH. D Theses Bhopal University, Bhopal.

-Chandra Mohan (1990) physico-chemical characteristics of Vasistha Godavari estuary, east coast of India, pre pollution status, Ind. J. Mar. Sci. 19:4242-46.

-Chetterjee Chinmoy (2000) physico-chemical studies of water quality of the river Nunia at Asansol industrial area. J. Environmental and poll. (4) :2592259-261

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- M. A Mane (2002) studied on hydrobiology of manar river near Degloor district Nanded. PhD. Theses swami Ramanand Teerth Marathwada University Nanded.

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- B.R Chavan , A Yakupitiyage and S. Kumar .(2009) Asia- pacific Journal of Rural Development . vol. XIX , No. 2.

- Sawant Paravati Laxmanrao (2009) studied on hydrobiological study of makani Reservoir mkani dist osmanabad. PH. D Theses Dr Babasaheb Marathawada University Aaorangabad.

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- Mukesh Chandra ,Saxena R. S and Sharma H. (2014) hydrobiological studies in river Burhi ganga in district Etah (UP)India.Journal of advanced laboratory research in biology.

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-Shambharkar Rajesh M. (2016) theses Dr Babasaheb Ambedakar Marathawada University. He studied the Limnological study of girna project near panzangoan tahshil nandgoan district nashik India.

-Mete Yogiraj Tulsiram (2016) theses Dr Babasaheb Ambedkar Marathwada University.He studied the limnological study of some water bodies of kaij tahsil district beed.

- Kumbar Aravind Choodamani (2016) theses Dr Babasaheb Ambedkar Marathwada University He studied the Limnological study of ujaini project of madha tahshil solapur.

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-A kumari (2020) Hydrobiology and phytoplankton population in sona River of siwan District in North Bihar. Research journal of science and technology.

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Signature

Research Student

Signature

Research Guide